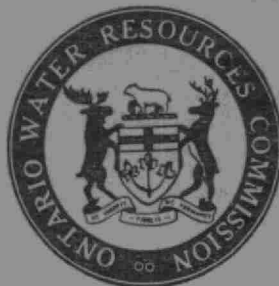


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THE
ONTARIO WATER RESOURCES
COMMISSION

WATER POLLUTION SURVEY

of the

TOWN OF PARKHILL

COUNTY OF MIDDLESEX

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Report on a water pollution
survey of the town of Parkhill,
county of Middlesex.

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REPORT
ON A
WATER POLLUTION SURVEY
OF THE
TOWN OF PARKHILL
COUNTY OF MIDDLESEX
1968

District Engineers Branch
Division of Sanitary Engineering

REPORT

ONTARIO WATER RESOURCES COMMISSION

INTRODUCTION

A water pollution survey of surface water drains, storm sewers, private drains, and watercourses within the Town of Parkhill was conducted on August 15, 1968.

Mr. A. F. Bannister, Clerk, provided information pertinent to the survey. Mr. R. Mawson, Works Foreman, assisted in the sampling programme.

The Town of Parkhill with an assessed population of 1144 (1968 Municipal Directory) is located near the junction of Highways No. 81 and 7 in the north-west section of the County of Middlesex. Assessment is mostly residential and commercial.

Drainage waters from the area are directed in general into the Cameron Municipal drain with a small north-central section draining directly into the Parkhill Creek.

The Cameron drain has its upper reaches in the Township of West Williams and flows in a north-westerly direction through the central section of Parkhill with discharge into the Parkhill Creek. Parkhill Creek constitutes a part of the Ausable River drainage basin.

WATER SUPPLY

Water for the municipality is obtained from two drilled wells. The average daily pumpage for 1967 was 99,500 gallons. Water treatment consists of aeration for hydrogen sulphide removal and chlorination.

POLLUTION CONTROL

Sanitary Sewage and Domestic Wastes

The Town of Parkhill does not have a communal sewerage works. Individual septic tank systems are utilized for treatment and disposal of domestic and commercial wastes.

Refuse Disposal

Garbage and refuse collected in the area is deposited in the Township of Westminster Municipal Dump. The site is located in the north-west section of the town at the north end of Victoria Street. The dumping area has been filled in the western and central sections and extends close to the channel of the Cameron drain. Refuse is currently being dumped in the eastern section away from the drain area. It is probable that some drainage and seepage does gain access to the Cameron drain from the dump area because of its proximity, however the operation is not considered to be a major source of pollution at this time.

WATER QUALITY

As a measure in locating sources of pollution and in assessing the degree of pollution being discharged from the town, water samples were collected where possible from the flows of surface-water drains, private drains and storm sewers.

The sanitary chemical analyses and results of bacteriological examinations of samples collected are listed in TABLE I. The location of sampling points are designated on the accompanying plan by watercourse mileage distances from the mouth of the Ausable River.

INTERPRETATION OF LABORATORY ANALYSES

As a guide in the interpretation of laboratory analyses results, the Ontario Water Resources Commission water quality objectives for surface-water drains and storm sewers are as follows:

- 5 day BOD (Biochemical Oxygen Demand)
 - not greater than 15 parts per million (PPM)

- Suspended Solids
 - not greater than 15 parts per million (PPM)

- Anionic Detergent (ABS)
 - the presence of anionic detergent in water samples usually indicates pollution from domestic sources.

SIGNIFICANCE OF LABORATORY ANALYSES

By comparing the laboratory analyses of samples

collected from the surface-water drains with the objective water quality figures, the level of pollution can be established. Attention is therefore directed to the appended laboratory results shown in TABLE I. These analytical figures indicate conditions of gross pollution in all of the surface-water drains and storm sewers investigated.

The excessively high 5 day BOD, anionic detergent, and coliform content indicate that sanitary sewage and other domestic waste is the probable source of the pollution.

This pollution may be gaining access to the surface-water drainage system because of:

1. Inadequacy of septic tank systems.

It is probable that, in many business properties and also in other residential properties, space is not available for the installation of adequate field-tile disposal beds. The lack of land area for retention disposal necessitates the discharge of overflow from the septic tank directly into the surface-water drainage system. This septic material is a major source of pollution.

2. Direct discharge of sanitary sewage and domestic waste through private drains into the drainage system. Laundry and kitchen sink wastes are, in many instances, disposed of by this means.

The discharge of polluting materials into a drainage system or watercourse constitutes a violation of regulations under the Ontario Water Resources Commission Act, Section 27, Subsection 1.

SUMMARY

A water pollution survey was conducted in the Town of Parkhill in August, 1968.

The visual observations and findings of the survey confirm that polluting materials are gaining access to the municipal surface-water drains and storm sewers. These drains, in turn, discharge into the Gillies-Cameron drain and contribute to pollution of the receiving watercourse.

The wastes and polluting materials are being discharged into the surface-water drains from private domestic and commercial properties on which adequate waste treatment facilities are not provided.

RECOMMENDATIONS

In consideration of the observations and findings of this water pollution survey, the following recommendation is presented:

1. The Town of Parkhill should institute a water pollution abatement programme. Such a programme will necessitate

the installation of a sanitary sewer collection system and the provision of an adequate means of sewage treatment.

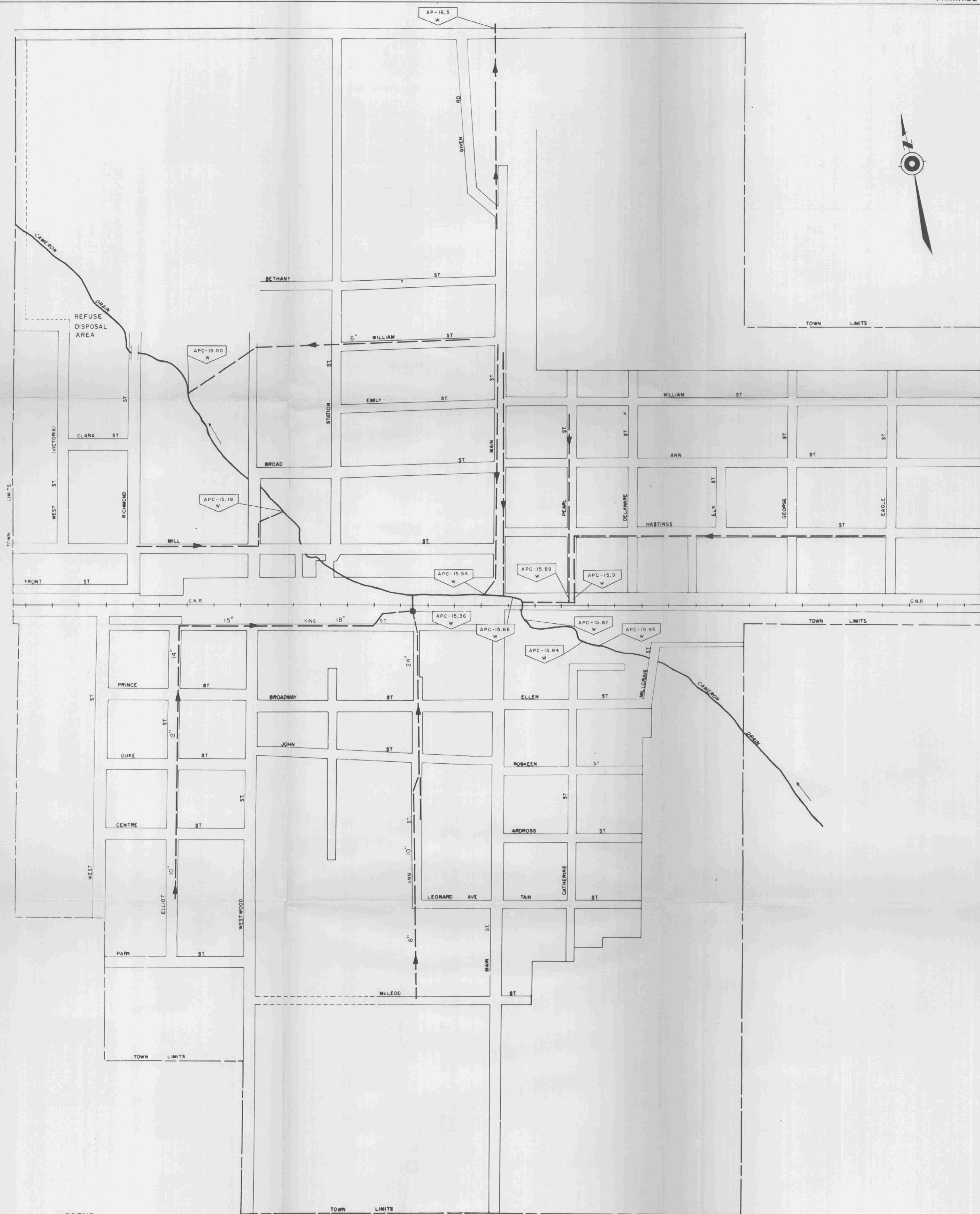
Prepared by: *A. D. ...*
for J. K. Ferris, Technician,
Division of Sanitary
Engineering.

TABLE I

TOWN OF PARKHILL - WATER POLLUTION SURVEY

SURFACE WATER DRAINS AND STORM SEWERSOUTFALLS TO CAMERON DRAIN

<u>Location of Sampling Points</u>	<u>Description of Sampling Points</u>	<u>5-Day BOD (PPM)</u>	<u>SOLIDS (PPM)</u>			<u>ANIONIC DETERGENTS as ABS</u>	<u>COLIFORMS PER 100 ML MEMBRANE FILTER</u>
			<u>TOTAL</u>	<u>SUSP.</u>	<u>DISS.</u>		
APC 15.00 W	William St. Outfall	54.0	1860	120	1740	1.0	500,000
APC 15.18 W	Union St. Outfall (North of Mill St.)	785.0	5364	2904	2460	2.0	6,000,000
APC 15.36 W	King St. Outfall	37.0	2060	134	1926	0.2	1,160,000
APC 15.54 W	Main St. N-W Corner of Bridge	870.0	3500	1354	2146	22.0	170,000,000
APC 15.86 W	Main St. N-E Corner of Bridge	430.0	2286	520	1748	13.0	25,000,000
APC 15.87 W	South-east Corner of Main St. Bridge - South of C.N.R.	89.0	2050	142	1908	14.0	26,000,000
APC 15.89 W	Pearl St. - West Side	760.0	2774	934	1840	15.0	8,000,000
APC 15.90 W	Pearl St. - East Side	1790.0	17964	17226	720	1.0	7,000,000
APC 15.94 W	Catherine St. Outfall	No flow at time of inspection					
APC 15.95 W	Catherine St. Outfall	No flow at time of inspection					
APC 16.50 W	Main St. N - W Side - Outfall to Parkhill Creek	162.0	2280	564	1716	0.2	31,000



LEGEND

- MUNICIPAL DRAIN
- COVERED DRAIN
- APC-15.54 W — OUTFALL SHOWING STREAM AND MILEAGE
- TYPE OF OUTFALL
- W — STORM SEWER

ONTARIO WATER RESOURCES COMMISSION

TOWN OF PARKHILL
WATER POLLUTION SURVEY
1968

SCALE: 1" = 400'

DRAWN BY: K. INAMOTO

DATE: FEBRUARY 14, 1969.

CHECKED BY:

DRAWING NO: 69-37-DE